BEFORE THE

Federal Communications Commission

In the Matter of	)	
	)	
PETITION FOR DECLARATORY RULING,	)	
SPECIAL RELIEF, AND INSTITUTION OF	)	RM No. 8775
RULEMAKING BY	)	
AMERICA'S CARRIERS	)	
TELECOMMUNICATION ASSOCIATION	)	

To the Commission:

COMMENTS OF BBN CORPORATION

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Its Attorney

May 8, 1996

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To the Commission:

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BBN Corporation ("BBN") by its attorneys and pursuant to Section 1.415 of the Commission's rules, hereby files its comments in response to the America's Carriers Telecommunication Association ("ACTA") petition for declaratory ruling, special relief, and institution of rulemaking against VocalTec, Inc., and other providers of telephone services via the Internet, and the Commission's March 8, 1996, public notice seeking comments on the ACTA petition.

I. BBN'S INTEREST IN THIS PROCEEDING.

Through its BBN Planet commercial services, BBN is one of the nation's largest providers of managed Internet access and value-added services for businesses and universities, government agencies, and other organizations. BBN's Planet services include high-speed, dedicated and dial-up Internet access; World Wide Web site creation and hosting; managed Internet security; Internet application consulting and systems integration; network management; and development of value-added, Internet-based applications.

BBN also provides secure, global networks for government and commercial customers. BBN helped design and build the first packet-switched data communications network, the ARPANET, for the U.S. Department of Defense. Last month BBN was selected as the first Internet solutions provider authorized by the U.S. General Services Administration to provide Internet connection services to all government agencies. Originally designed primarily to convey data traffic between computers and remote "dumb" terminals, BBN's networks have continually evolved to a point where a few customers are beginning to use them for voice and video communications. As these networks have gotten faster, they have also gotten smarter: BBN is augmenting its networks with collaborative Internet technologies, such as intelligent agents that enable effective retrieval of useful information from multiple electronic sources.

II. BACKGROUND.

In its petition, ACTA submits that, both under established precedents defining "common carriage" or "public utility" types of operations for purposes of regulatory jurisdiction, and by statutory enactment, purveyors of long distance voice communications services via the Internet are interstate telecommunications carriers, subject to Federal regulation under Title II of the Communications Act of 1934, and are also intrastate telecommunications carriers, subject to regulation by state public utility commissions. ACTA implies that the Commission should assert Title II jurisdiction over these Internet service providers and impose common carrier, utility-style regulation on them, and that state public utility commissions should follow suit within the ambit of their respective jurisdictions.

III. EXISTING LAWS AND PRECEDENTS DO NOT COMPEL THE COMMISSION TO IMPOSE COMMON CARRIER, UTILITY-STYLE REGULATION ON INTERNET TELEPHONY.

In the *Final Decision* in *Computer II*, the Federal Communications Commission ("the Commission") established a dichotomy between "basic services," which would be subject to regulation, and "enhanced services," which would not be regulated. The Commission characterized basic services as "a pure transmission capability over a communications path that is virtually transparent in terms of its interaction with customer supplied information."[1/] The agency defined enhanced services as follows:

> [T]he term "enhanced service" shall refer to services offered over common carrier transmission facilities, which employ computer processing applications that act on the format, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different or restructured information; or involve subscriber interaction with stored information.[2/]

In the *Final Decision*, the Commission classified protocol processing as an enhanced service; it thoroughly reexamined and affirmed that classification in several subsequent decisions.[3/]

The Commission has never treated enhanced services as if they were synonymous with data communications. Thus, for example, it found an AT&T packet-switched transmission

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1/ Second Computer Inquiry, *Final Decision*, 77 FCC 2d 384 (1980) at 420, ¶ 96.

2/ Section 64.702(a) of the Commission's Rules, 47 C.F.R. §64.702(a).

3/ *See* Communications Protocols under Section 64.702 of the Commission's Rules and Regulations, *Memorandum Opinion, Order and Statement of Principles*, 95 FCC 2d 584 (1983); In the Matter of Communications Protocols under Sections 64.702 of the Commission's Rules and Regulations, *Memorandum Opinion and Order on Reconsideration*, 2 FCC Rcd 3035 (1987) (*1987 Communications Protocols Order*) at 3074-3082, ¶¶ 12-71.

service provided without protocol conversion to be a basic service.[4/] In like manner, the mere presence of voice traffic on a network does not end the analysis of its regulatory status.

For purposes of the issues raised by the ACTA petition, the Commission decisions that most clearly illuminate the boundary between basic and enhanced services are those involving the commingled provision of different kinds of services: many value-added networks, including BBN's, connect computers using identical protocols as well as computers that use different protocols. Interpreted literalistically, the Commission's service definitions would imply that such a network would be subject to common carrier regulation as a basic service at one moment and then, a millisecond later, would be reclassified as an enhanced service. To resolve that conundrum, the Commission held that the enhanced components of such an offering "contaminate" the basic components, and exercised its discretion to classify the entire service as enhanced, and, thus, exempt from common carrier regulation.[5/]

An informed reading of the Commission's contamination decisions confirms that the emergence of Internet telephony does not require a change in the Internet's regulatory classification as enhanced service. Internet services have always conveyed some traffic transparently, because there has always been a substantial amount of data communication that does not require the network to "employ computer processing applications that act on the format,

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4/ *See* American Telephone and Telegraph Company, Rates and Regulations for Bell Packet Switching Service, *Memorandum Opinion and Order*, 91 FCC 2d 1 (1982), 94 FCC 2d 48 (1983) (*BPPS*).

5/ *See* In the Matter of Decreased Regulation of Certain Basic Telecommunications Services, *Notice of Proposed Rulemaking*, 2 FCC Rcd 645 (1987) at 648, ¶ 21. This interpretation was affirmed in the *1987 Communications Protocols Order*.

code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different or restructured information; or involve subscriber interaction with stored information." Some Internet traffic now supports voice conversations, and may or may not require protocol conversions; in either case, the voice traffic is inextricably commingled with traffic that *does* require protocol conversions and other format changes. The logic of the Commission's contamination decisions still holds: value-added communication that includes any format changes may appropriately be treated as wholly enhanced, because it is impossible to split the baby without doing violence to the entire network. Congress knows how well the Commission's longstanding interpretation of its rules has worked: the recently enacted Telecommunications Act of 1996 does nothing to disturb the definitional boundary between basic and enhanced services.[6/]

IV. IT WOULD BE BAD POLICY TO CLASSIFY INTERNET TELEPHONY AS A BASIC SERVICE.

Even if the Commission were to find that has it legal discretion to classify Internet telephony as a basic service, it should refrain from doing so as a matter of policy, because such a decision would require fundamental reengineering of the Internet, imposing massive costs on end users and severely impairing the efficiency of services provided to them.

6/ The Act's definition of "information service" is essentially identical to the Commission's longstanding definition and interpretation of enhanced services, and the Act's definition of "telecommunications service" mirrors the Commission's settled view of "basic" services. Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996) (hereafter cited as "the Act"). *Compare* Section 3 of the Act's definition of information service, to be codified at 47 U.S.C. §153(20), with the definition of enhanced service in the Commission's rules, 47 C.F.R. §64.702(a).

Internet service provider networks are not equipped to differentiate between digital bits supporting voice and digital bits conveying other kinds of information. Granting ACTA's petition would require the Internet services industry to design and deploy electronic "sniffers" to detect the presence of voice traffic in the trillions of data packets that flow through the Internet. Deploying such devices throughout the Internet would involve costs beyond calculation and would sharply constrict the flow of data, in effect, requiring data packets to line up at electronic regulatory checkpoints before proceeding forward. In any event, ACTA has made no attempt to demonstrate that it would be technically feasible to produce such devices.

One of the most disturbing implications of the ACTA petition is that it would require Internet service providers to differentiate between interstate and intrastate messages and comply with jurisdictional regulatory requirements. In 1980, in the same decision in which it deregulated interstate provision of enhanced data communication services, the Commission preempted the states from regulating intrastate provision of enhanced services. Ten years later a court overturned the preemption aspect of that order,[7] but the states were habituated to leaving enhanced service providers alone and had seen them flourish in a deregulated environment. By contrast, most states apply common carrier utility-style regulation to intrastate resellers of voice communication services. Most states would likely follow any Commission decision to reclassify Internet telephony services as common carriage and would apply traditional regulatory requirements, including certification and tariffing of intrastate transmissions.

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[7] *California v. FCC*, 905 F.2d 1217 (9th Cir. 1990) (California I).

Complying with state common carrier requirements would impose massive costs on Internet service providers, in part because their networks are not designed to detect or record the geographic origins or destinations of messages. The procedure for assigning Internet addresses differs radically from the geography-based approach used for telephone numbers. The InterNIC Registry, under the authority of the Internet Assigned Numbers Authority, allocates blocks of addresses to Internet service providers (ISPs). The ISPs in turn assign addresses or, in some cases, smaller blocks of addresses to their customers. Many of those customers assign addresses to customers of their own. Under this framework, Internet addresses are maintained by many different service providers, each of which may serve customers residing in many different jurisdictions. Unlike telephone area codes, the numerical addresses used to route messages around the Internet provide no clue to the geographic locations of senders or receivers.

Even if it were technically feasible to reengineer the Internet along the lines that grant of the ACTA petition would require, the costs of doing so would be grossly disproportionate to the trivial amount of Internet traffic that supports voice communications today. Voice communication via the Internet is at most a nascent technology, and it remains to be seen whether it will emerge as a significant force in the market place. The frame relay networks that support much of the Internet today are not optimized for voice communications. Frame relay technology requires not only that messages be digitized but that they be separated into many short "packets" of data, each of which has a separate header. These packets may be sent via different transmission paths, often arriving out of sequence, and must be reassembled near the destination. The resultant delays may be inconsequential for purposes of electronic mail or World Wide Web browsing, but can be quite noticeable for voice communications.

Some users may be willing to accept a reduction in transmission quality for long distance conversations when they are offered through Internet services with flat monthly fees, but those same fee structures are premised on the assumption that the typical user requires only a limited amount of transmission capacity. If a significant number of users begin to use the Internet for voice communications, service providers would have to reevaluate their fee structures. Indeed, BBN has already begun to offer usage-sensitive Internet connections for certain categories of users.

In short, it is premature to assume that voice communications will emerge as a significant source of revenue for Internet service providers, or that the amount of voice traffic diverted from traditional long distance carriers will be more than *de minimus*. At the same time, the Commission is addressing many other time-sensitive issues under tight deadlines imposed by the Act, and some of those decisions could alter the general regulatory environment in fundamental ways. Under these circumstances, the wisest course would clearly be to adopt a wait-and-see attitude toward Internet telephony services, and revisit this issue at a later date.

IV. CONCLUSION.

For the foregoing reasons, the Commission should reject the ACTA petition.

Respectfully submitted,

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May 8, 1996

CERTIFICATE OF SERVICE

I, Charles M. Oliver, do hereby certify that a copy of the foregoing Comments of BBN Corporation was hand delivered on this 8th day of May, 1996 to Charles H. Helein, Esq., Helein & Associates, P.C., 8180 Greensboro Drive, Suite 700, McLean, Virginia 22102.